

Application note AN005

Hotel room application using Proxima CU and Proxima RU with CO₂ and humidity

Outputs

- AD1: Heating 24 Vac PWM
- AD2: Cooling 24 Vac PWM
- AD3: 0...10 Vdc VAV CO₂ / %rH (maximum control)
- AD4: 0...10 Vdc fan, 3-step (2.5 / 5.0 / 7.0 V), controlled from RU fan button
- AO5: 0...10 V floor heating, controlled by cascade controller

Controller (C1)

- Temperature, setpoint, CO₂ and humidity from room unit
- Operation mode switch: input 2, key card (day / night)
- Dead zone: ±0,5 (day mode), ±1,0 (night mode), ±3,0 (eco mode)

Cascade controller (CC)

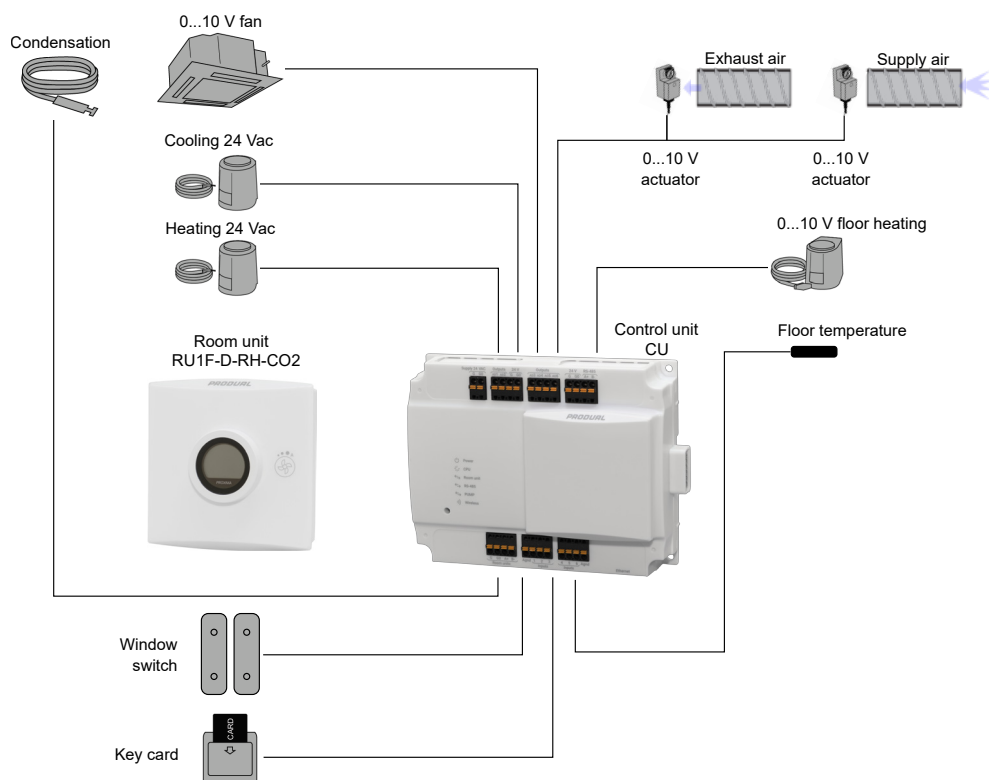
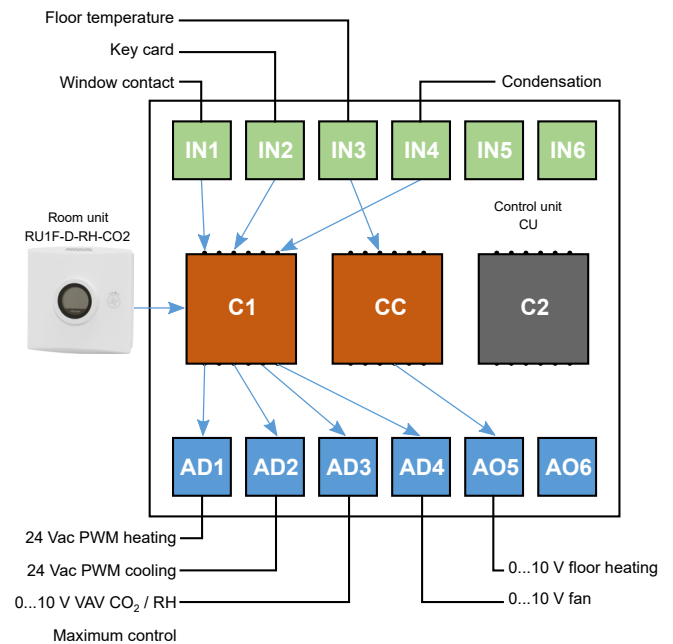
- Heating, temperature sensor from input IN3, setpoint range 22...27 °C

Input settings

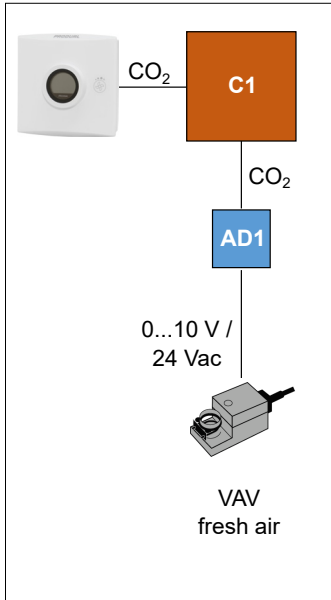
- IN1: window contact (blocks heating and fan at window open)
- IN2: Key card, for operation mode switch
- IN3: Floor temperature sensor for cascade controller (NTC 10K)
- IN4: Condensation switch (blocks cooling at condensation)

Operation modes

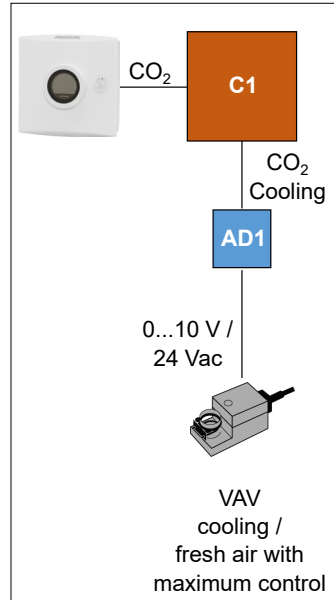
- Day mode (checked in, guest in room) is activated with card switch.
- Night mode (checked in, guest not in room) activates when the card is removed.
- Eco mode is from BMS, when the room is checked out.



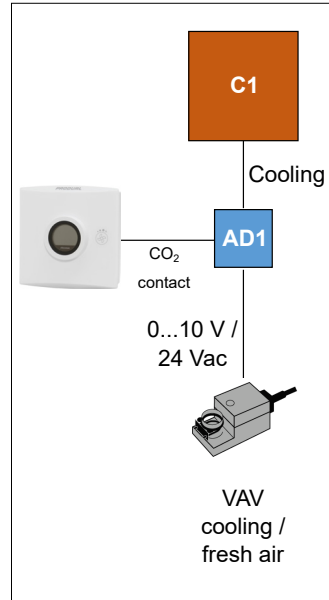
Different ways of using CO₂ information from Proxima RU



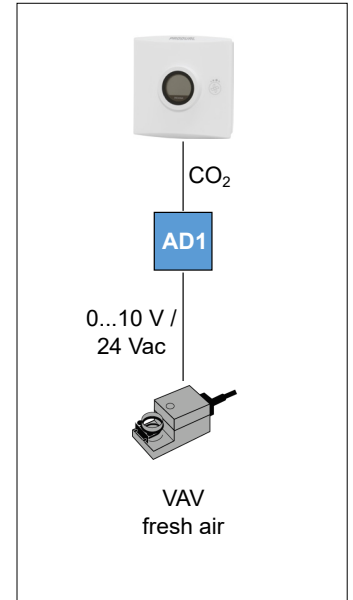
1. RU CO₂ -> CU controller
Controller output controls the fresh air supply.



2. RU CO₂ -> CU controller
Controller output controls the cooling and CO₂ level with maximum control.



3. RU CO₂ -> CU output
CU controller controls the cooling. The CO₂ level overrides the output.



4. RU CO₂ -> CU output
The output is controlled directly with CO₂ level from room unit.

NOTE: These examples show the use of CO₂ information from Proxima RU. The same logic applies also for relative humidity (RH models).